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REPORT ON THE GENERAL MEETING OF THE ACADEMY  
OF SCIENCES LATVIAN SSR.

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Basic Results of the Scientific Activity  
of the Academy of Sciences Latvian SSR in 1959.

By:  
K.K.Plaude

During the past year 1959 - the first year of intensive development of the communist society - the peoples of the Soviet Union attained many new successes by putting to practice the resolutions of the 21st Congress and the Plenum of the Communist Party of the Soviet Union (CPSU).

As a result of the tremendous upsurge of the working and creative activity of the working masses, the continued development of all branches of the national economy and the rise in the material welfare as well as that of the cultural level

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of the soviet people was ensured. The past year saw a further strengthening of our remarkable soviet system. It led to a significant increase in the organizational and educational roles played by the communist party in the mighty movement of the soviet people to the glittering heights of communism. It was also a year of new successes in our struggle for the preservation of world peace and relaxation of international tensions. Of historical importance to all of the peoples of the world was the voyage of N.S.Khrushchev to the United States.

As is evident from the communication of the TsSU of the Council of Ministers USSR, the planned annual production of pig iron, steel, rolled products, electrical energy and of other basic types of industrial products was completed ahead of schedule. The volume of industrial production increased by 11 percent over that of 1958 (including an increase of 12 percent for group "A", and an increase of 10.3 percent for group "B"). Suffice it to say that a total of almost 50 billion rubles of industrial production in excess of the planned annual quota was completed.

More than one thousand large new enterprises were started during the year, including three blast furnaces, ten open-hearth furnaces and three electrical furnaces. New power

million

units totaling about 5.5/kw have been put into operation in electric power stations. The world's largest power line, from the Stalingrad Electric Power Station to Moscow, has been put into operation. A total of 264 billion kwh of electric energy was produced - an increase of 12 percent over 1958.

During 1959 Soviet science enriched humanity by new attainments and discoveries in many areas of scientific knowledge.

The entire world was amazed at the creation and successful launching by the soviet people of the first artificial planet of the solar system. On 12 September, the Soviet Union directed a second cosmic rocket to the moon. This rocket, as proven by numerous observations made at stations over the entire globe, reached its objective. The launching of the third soviet cosmic rocket around the moon should be viewed as a magnificent achievement of science and technology. This rocket, equipped with the most perfect means of automatic steering, photographed the hidden side of the moon and transmitted the photographs to the earth.

On the same date of 12 September, the world's first atomic icebreaker, the "Lenin" was launched. As is known, the Soviet Union built the world's first atomic electric power station, and even now is continuing a whole series of successful undertakings for the utilization of atomic

energy for peaceful purposes.

Carrying out the resolutions of the June Plenum of the Central Committee of the Communist Party of the Soviet Union (CC CPSU), industrial enterprises, scientific research institutes and construction planning organizations attained important new successes in various fields of modern engineering during the past year. Based on the further development of both mechanization and automation of production, as well as on introduction of the newest high-speed production equipment and modern technology, improvements in all branches of the national economy went forward on a wide front. In this connection it is sufficient to note that in the Union more than 2,000 new machines were developed and constructed, the serial production of over 400 new types of machines was initiated, and more than 1,400 automatic, semi-automatic and line-production conveyors were introduced into the production process.

Technical progress in all branches of the national economy was achieved with the active participation of the working masses. During 1959, more than two million inventors and industrial engineers submitted in excess of 3.3 million proposals. Over two million were adopted resulting in a saving to the country of 11 billion rubles annually.

During the past year a total of 7.6 billion poods

of bread grains were harvested, and the cotton crop yield per hectare was at a new high. The USSR outstripped the United States in per capita milk and creamery butter production.

Putting into practice the resolutions of the 21st Congress of the CPSU, workers of the Latvian SSR, during the first year of the seven-year plan, also attained new successes. Planned industrial production exceeded the quota (to the extent of 106 percent of that quota). Production of peat and artificial gas rose sharply. Production of electrical energy also increased. Production of prefabricated reinforced concrete constructions, production of bricks and other building materials increased.

Considerable work was done in the republic during 1959 on the creation of new types of machinery and equipment. The Institutes of the Academy also took a creative part in this work. Production of safety equipment for work with radioactive materials was introduced. Industrial samples of fly-wheel type diesel generators were created, as well as electric trains types ER-7, ER-6 and other machines.

In his speech at the December Plenum of the CC CPSU, N.S.Khrushchev, summarizing our achievements, said: "We have risen to a good height and have achieved a satisfactory speed. As a result, it is now easier to shift to higher

"speeds and to rise to new heights." Our problem is to continue our present speed-up in all science areas, and to create at even greater speeds the solid foundations needed for the fulfillment of the seven-year plan ahead of schedule.

Under conditions of large-scale building of communism, science is attaining greater significance from one day to the next as a productive force. The 21st *Congress* of the CPSU deems it necessary to attain during these seven years an even more rapid rate of development of all science branches, and to achieve important theoretical research work and great discoveries that will ensure further scientific and technical progress. For this purpose, the means and resources of science must be concentrated in the most important directions, directions that have great practical as well as theoretical significance. At the same time, by strengthening the ties between scientific organizations and actual practice, ever newer achievements of science and engineering must be introduced into the national economy.

All these considerations served as a basis for the scientific and scientific-technical activity of the Academy of Sciences Latvian SSR during the past year. The subjects assigned to a series of institutes were rearranged and, in accordance with the decisions of the June Plenum of the

CC CPSU, research designed to solve the most important problems of new branches of industry in the republic, concerned with the creation of solid scientific foundations for the further development of technical progress was strengthened.

There was a widening of the scope of work for improvement and automation of technological processes, as well as of the study of raw material resources of the republic, the creation of new materials and the industrialization of construction. The creative-type friendship between workers in science and workers in production was strengthened.

Let us briefly review the most important scientific results of the past year.

In accordance with the decisions of the May Plenum of the CC CPSU, one of the main objectives of the Academy in the field of chemistry was the start and the fullest possible development of theoretical and research work for the study of polymers and initial monomers. At the same time, the Academy of Sciences participated in the solution of specific scientific-technical problems of development of technological processes in the production of synthetic materials, that should be put on an industrial basis in the next few years.

In order to ensure the development and intensification of scientific research work in this area, scientific

and organizational measures were taken within the Academy, that were designed to strengthen our chemically oriented research enterprises. Thus, on 1 October 1958 a department of chemical and geological sciences was created. Within the institute of organic synthesis, new laboratories were established (for the synthesis of anti-cancer compounds, contact processes and monomers, the chemistry of albumins, the technology of fine organic synthesis and the synthesis of medicinal preparations.) A fiberglas laboratory was set up within the *Institute of Chemistry* last year. The institute charged with problems of forestry was reorganized as the Institute of *Forestry* and the Chemistry of Wood, within which were created a section on lignite and polysaccharide and a construction bureau.

The basic work of the institutes in the new department was concentrated on a study of problems in the field of chemical structure, of kinetics and reaction ability, of development of methods of obtaining complex organic reactors, of various means of utilizing peat and of the synthesis of high polymers of wood plastics and wood fiberboard.

Based on a study of these problems, many new compounds were synthesized. They are of interest as potential

fungicides and anti-cancer preparations, as reagents of precious and rare elements, or as semi-finished products for plastic materials. A new class of compounds was discovered that possess narcotic, analgesic and anti-spasmodic properties, as well as compounds possessing regulatory functions in the case of plants.

Of the several hundred materials synthesized for the first time, some are of interest to medicine as anti-coagulants, as measures for the treatment of nervous disorders, as hypertonic and fungicide preparations. Production processes and distribution of such preparations as etoksen (for the treatment of gastro-intestinal tumors), furazolidone (for use in veterinary medicine), marsilid (for the treatment of mental diseases, ratindan (an anti-rodent) and others have been developed.

The project for an industrial installation to obtain maleic anhydride by means of the vapor-phase oxidation of furfural, in accordance with the methods of the Institute of Organic Synthesis has been developed.

Chemists of Latvia also studied the possibilities of a diversified utilization of local raw material resources, in particular, dolomites, sands, peat and all available wood waste. A laboratory was designed and construc-

ted, in which fiberglass is being produced from locally available raw materials. This fiber *meets* the needs of the textile industry.

It has been confirmed that the production cycle of calcareous-sand wall blocks may be speeded up tenfold, as compared with the natural process of cutting blocks out of the rock, by *means* of artificial carbonization (chemical Institute).

Further studies were conducted (Institute of *Forestry* and *Chemistry of Wood*) on the theoretical bases of the hydrolysis of vegetable matter, by the use of concentrated acids. New data were brought to light concerning the production of cellulose and semi-cellulose from deciduous wood by the method of hydrotropic boiling. New possibilities have been discovered in the use of lignin for the production of plastics.

At the instance of the national committee for Soviet geologists, and in connection with the forthcoming 21st session of the International congress, the geologists of the Academy of Sciences Latvian SSR prepared a series of maps and wrote articles on the geology of the Latvian SSR. A monograph on the geological problems of the republic has been prepared and is being printed. It is devoted to the 20<sup>th</sup> anniversary of Soviet Latvia. Valuable information

has been obtained regarding clarification of the conditions under which heavy minerals were deposited in the modern and coastal ancient areas of the Baltic sea. An atlas of useful minerals has been prepared.

All of the above bears witness to the fact that over the past year, and in the fields of chemistry and geology, the Academy of Sciences has succeeded in attaining substantial scientific and practical results. The prestige of our chemists has risen markedly in the course of the creation of a chemical industry in the republic.

The seven-year plan, as one of its main objectives, makes provision for the all-round development of the productive forces of the country and, based on the development of heavy industry, for the attainment of an increase in production of such magnitude as to make possible a decisive step in the creation of a material and technical base for communism, that will ensure victory for the USSR in peaceful economic competition with capitalistic countries.

The 21st Congress of the CPSU pointed out that the decisive condition for the successful accomplishment of this task is the wide assimilation of modern technology and the diversified mechanization and automation of production processes. These considerations determined the basic nature

of the work of the past year in the fields of physical and technical sciences. Such was the nature of the work conducted in a study of the uses of atomic energy for peaceful purposes, in the physics of magnetic phenomena, in computer engineering, electric power problems, the development of a scientific basis for the automation and mechanization of production processes, for work directed towards the creation of new types of concretes and the construction of prefabricated reinforced concrete.

In order to ensure the development of the above-mentioned tasks, as a first requirement, the Institute of Machine Science was strengthened by additional personnel and material resources. A number of new laboratories was created (for reactors, ferrite materials - in the Institute of Physics; for electrical engineering of semi-conductors, for gas heat engineering - in the Institute of Engineering; for the rheology of concrete - in the Institute of Building Construction.)

Our physicists, together with the Sovnarkhoz (Council of National Economy) and with the republic's own enterprises, created a series of new radioactive relay-type instruments, for the automation and control of production processes. A special construction bureau was

created for the development of radioactive instruments. Several experimental plants were established. Thus, we now have all the necessary prerequisites for a significant increase in the prestige of the republic in the field of theoretical and practical work on the use of radioactivity in the national economy.

An original pump for the transfer of liquid metal was developed in theory and was actually constructed. This work is being utilized by the Union's metallurgical industry, as well as in some other special branches of production.

Completed is the assembly of an electronic computer LM-3, built with the active assistance of the enterprises of the city of Riga. It is now being adjusted and readied for operation.

Considerable efforts of the Academy were devoted to the construction of an atomic reactor and the training of its service personnel. It is proposed to complete its construction during the present year, but in order to fulfill the work planned, special attention to achieve this objective will be required on the part of our own group as well as on the part of the construction organizations of the republic.

In the field of astrophysics, work continued on the compilation of a catalogue of natural motions of red giant stars. In accordance with the program of the International Geophysical Year, systematic observations of the sun's integral radiation were conducted. The data obtained were published in the form of monthly reports in the publications of the Academy of Sciences of the Union.

The basic scientific foundations regarding the prospects for the development of power in the republic up to the 1975-1980 period were worked out and established. Plans for furnishing power to separate branches of the national economy were established on the basis of a widespread use of gas, utilization of liquid fuel and maximal development of heat distribution and complete electrification of industry and daily life (Institute of Power <sup>engineering</sup> and Electrical Engineering). Studies previously initiated concerning systems of heat distribution, were completed, and the theoretical bases for their regulation were developed. Also developed was the entire complex of means by which buildings provided with heat would be automatically serviced and the heating system would be automated (by means of a local automatic temperature regulator, a non-contact program consumption regulator, a pressure regulator and so forth).

A series of theoretical and experimental studies were completed having to do with heat and mass transfer in the processing of raw peat, in accordance with the system of the Power Engineering Institute. A laboratory installation has been developed for the production of peat flooring. The laboratory has served as a basis of a semi-industrialized project having a production capacity of 3 tons per hour.

During the year under review, a series of theoretical and experimental studies were completed for the creation of a new type of synchronous electric machines (Institute of Power and Electrical Engineering). On the basis of these studies the Institute has developed, constructed and tested experimental samples of new non-contact direct and alternating current generators with built-in semiconductor rectifiers. One type of generator (SVP-4), is designed for new electricity supply systems for railroad passenger cars. Together with the Riga Diesel Plant, a working sample of a serial type diesel generator was developed, and test models were constructed.

The personnel of the Institute of Machine Science, for the first time in scientific literature, systematized a step-by-step theory of constructional damping, and developed a method of designing resilient frictional systems that are of

importance in practice.

Also completed was a program of studies of the use of plastic materials in electric engine collectors. Experimental work in this regard was carried out together with the REZ (Riga Electrical Machine-Building Plant), and received the authoritative approval of the GNTK [State Scientific Engineering Committee?] and other organizations. In order to strengthen this work, the Institute is creating at the REZ plant a diversified laboratory for the handling of these problems.

A method has been devised and measures taken for automation of the technology of production of concrete. An ultrasonic method of studying the hardening characteristics of cement paste has been developed and tested. The main physical-technical characteristic of structural gas-concrete has been determined (Institute of Building-Construction and Architecture). A new type vibromixer has been projected and manufactured.

An analysis of the work of the institutes of physical-technical orientation shows, however, that they are as yet far from being prepared fully to join in the solution of the urgent problems that flow from the resolutions of the June Plenum of the CC CPSU. New theoretical studies

that could speed up the development of technical industrial progress are not being conducted with sufficient zeal. This is especially true of work on computer technique.

The successful carrying out of the seven-year plan requires from us a greatly intensified effort in the development of essentially new systems of diversified automation of technological processes in machine and instrument building, in chemical engineering and in other fields, based on the widest possible utilization of the newest achievements in the field of nuclear physics, electronics, computer technique, mechanics and solid state physics.

For this reason, the current year should witness the fullest possible development in our Academy of new tasks such as electronic control units and automatic machines, the creation of special purpose electric engines, the study of physical and technical characteristics and areas of application of new synthetic materials. Work designed to create a scientific basis for the mechanics and technology of plastics must be widened in scope. The level of methodology of experimentation work must be sharply raised.

Biology is gaining serious importance in the development of a theoretical basis for medical and agricultural sciences. The further development of all biologi-

cal sciences will depend upon the extent to which achievements in physics and chemistry are utilized in biology. To some extent, although by far inadequate, these tendencies were reflected in the plans of the institutes for 1959.

Studies designed to develop theoretical bases for fully adequate farm animal and bird feeds have been conducted on a wide scope. (Institute of Biology). The role of enriching materials was studied (trace-elements, vitamins and antibiotics) in metabolism and in raising the food value of animal and bird feed rations. In accordance with recipes worked out by our biologists jointly with the Latvian Scientific-Research Institute Animal Husbandry and Veterinary Medicine, the Riga Animal Feed Plant produced in the year 1959 a total of 1,500 tons of enriched feeds, that were used as feed for cows, hogs and chicks in 200 kolkhozes and sovkhozes of the republic. A calculation of the economic effectiveness of feeding cows, calves, hogs, and chickens with enriched feeds showed that, for the same feed expenses, 10 percent more milk was obtained, 12 percent more pork and 20 to 30 percent increase by weight of new born animals.

As a result of the study of the physiological role of *trace*-elements as a vegetable food, new variants

for determining the gross resources and the migrating types of *trace*-elements (Mo, Cu, Zn, Mn, Co) in different plants and soils were determined. These methods are now part of the every day practice of the scientific-research enterprises of the USSR. During 1959 work was done on the study of the effect of molybdenum on the growing of clover and other bean cultures under conditions of the *turf-covered podzol*<sup>\*)</sup> soils of the republic. A check of production on a 1,000 hectare tract showed that the addition of molybdenum as a plant food, increased the harvest of clover hay to from 13.6 up to 48.5 percent (8 to 15 centners/hectare for red two-crop clover; 8 to 22.5 centners/hectare for single-crop and Swedish clover). The addition of molybdenum as plant food raised the crop of clover seed by 33 percent, that of peas by 3 to 4 centners of seed per hectare, that of *alfalfa* by 8.6 centners/hectare. A field laboratory has been established for the determination of the existence of *trace* elements under conditions of the *Kolkhozes* and *sovkhozes*.

<sup>\*)</sup> White or gray ashlike soil typically occurring in northern Russia - Webster's Dictionary. (Translator's note)

Complex limnological studies were made (hydrochemical, hydrobiological and ichtyological) in 14 lakes of the Latgale plateau with an overall surface of 4,300 hectares, and in 6 lakes of the maritime region. As a result of these studies proposals have been worked out for a longterm exploitation of the fishery resources of these lakes. Jointly with the Gosplan, the Council of National Economy and the Scientific-Technical Council of the Latv. SSR, proposals have been developed for the creation of a single fishery to stock the internal reservoirs of the Latvian SSR with stock for selection work.

A study of the physiological bases of winter resistance of wood plants, made it possible to obtain new data on the role played by different sugars ( sucrose, and raffinose) in increasing frost resistance. Such sugars serve as a basis for developing methods of diagnosis of the degree of frost resistance of plants.

During the year 1959 the botanical gardens made significant additions to their collection of live plants with various new varieties and genera.

Several years work was completed on methods of speed drying of sawn timber by means of superheated steam (under temperatures of 150° to 125° and under normal atmos-

pheric pressure). This work was awarded the premium of the republic (Abolin'sh Ya.T., Upmanis K.K., Mikit E.A.).

The Institute of Microbiology in 1959 conducted a mass test of poliomyelitis immunization by means of live vaccine, as a result of which it was established that live poliomyelitis vaccine is completely harmless and possesses high immunological effectiveness. The scientific data obtained have been summarized in a compendium of papers on problems of virology.

In studying the effect of micro-elements on the activity of nitrogen-fixing bacteria, it was established that micro-elements raise the degree of activity of nitrogen-bacteria in the rhizosphere of plants. By the use of nitro-bacterine and micro-elements, an increase of 10 to 17 percent in the harvest of oat seeds was obtained.

The plan of the Institute of Experimental Medicine was rearranged and work in this field was expanded. development of the methodology of feeding under conditions of radiation treatment of malignant tumors was completed. A new apparatus was created for the introduction into actual practice of the study of secretions, motoricity and the conditions of blood circulation of the stomach, under normal conditions and in a pathological state (ulcers and stomach cancer).

The anti-cancer preparation Tie-TEF has been introduced into clinical use.

Experimental studies in the field of disturbed metabolism in humans and in animal organisms in cases of radiation sickness were completed.

The treatment of tuberculosis by an extra-pleural pneumothorax and the <sup>anti</sup>tuberculosis vaccination of children and teenagers with the strengthened BCG vaccine has been introduced into practice. Work on the study of the ion coastal area regime of the Riga <sup>A</sup> has been completed, together with a study of the effect of the ionization of the maritime atmosphere on the course of the hypertonic disease.

The period of large scale construction of communism, confronts workers in social sciences with important problems. At the present level of development of the national economy of the USSR, the importance of the science of economics is especially great. This science is closely linked with the planning of the national economy and the actuality of building communism.

The Institute of Economics, during 1959, studied the development and distribution problems of socialist production in the Latvian SSR, studied problems of increasing labor productivity and lowering production costs in industry and in

farm production. It also studied problems of strengthening the organization of kolkhozes and the sovkhozes of the republic. The Institute worked in the field of theoretical studies of questions of the history of Latvian economic theories, the history of Latvian philosophy and socio-political theory, as well as on problems of a socialist state and law.

Nevertheless, the Institute of Economics did not work in a satisfactory manner. Its previous leaders (corresponding member P.P. Dzerve and candidate of economic sciences E.A. Trey) was unable correctly to understand the problems that faced the Institute, and organize the personnel for an active study of economic problems flowing from the historical decisions of the 21st Congress of the CPSU. The Institute was but loosely tied in with the planning and actual practice of building communism. Specific papers of the Institute contain serious errors of a political nature. The presidium of the Academy is taking steps to liquidate the aftermath of the errors of management and to improve the activity of the Institute.

One of the basic objectives of the Institute of History was the publication of a comprehensive course of Latvian history, the third volume of which was published

last year. Such a marxist history course was needed for higher education institutions and for school instructors, as well as for the Soviet and party personnel. Besides this, it was necessary to counteract all the bourgeois concepts that were being widely propagandized prior to the advent of the Soviet power in the field of history. Two compendiums of documents also were published, consisting of informative material and memoirs - "Soviet Latvia in the year 1919" and "Latvian sharpshooters in the struggle for the Soviet power".

Continuing the study of the material culture and life of the Latvian people, several archeological and ethnographic expeditions were made into several regions of the republic. Much valuable material was obtained in archeological excavations. This material dated back to the first millennium before the new era (at the site of the ancient town of Tervete). The archeological material bears witness to the close ties that existed between the ancient Latgals and the Slavs, and illustrates the production level of that period. It throws light on the ethnic-genetical problems of the Latvian people and their economic ties with neighboring peoples.

The need for basic works on Latvian grammar and

and the history of Latvian literature has long ago become essential. In 1959 the Institute of Language and Literature prepared such a paper under the title of "Toponimic names of the Latvian SSR", by academician Ya. M. Endzelin. Also published was the first volume of a "Grammar of modern Latvian literary language". The second volume is being re-died for publication. This work is designed for use by wide circles of the intelligentsia - teachers, students of *higher* educational institutions, persons prominent in literature and the arts. Separate volumes of the "History of Latvian literature" have been published.

At the begin<sup>ning</sup> of the past year, the Presidium of the Academy discussed the work of the Institute of Language and Literature, and thus uncovered several shortcomings in the Institute's management, in the existing basis for studies and in its publishing activity. Since then the majority of these shortcomings have been obviated.

The *leaders* of the Department of Social Sciences, however, must direct the scientific activity of both this and other institutes of the Department more forcefully and efficiently. It is only under such conditions that the institutes of social sciences will be in a position successfully to fulfill the important tasks that our party

entrusts to workers on the ideological front.

In concluding this survey it is possible to deduce that the scientists of our Academy have undoubtedly attained substantial results, both theoretical and practical, in most fields of science. The results are of great interest both to the national economy of our republic as well as that of other republics in the fraternity of republics of the Soviet Union.

A substantial amount of work has been readied for introduction into life, and the present problem consists in assuring their passage into the industrial stage in the next few years.

Publications are an important indication of scientific activity. Over 130 titles have been prepared for printing during the past year. A total of 1,188 scientific articles have been published. Almost 2,000 lectures have been read at collective and state farms, and more than 4,000 consultations have taken place at enterprises of the national economy. In this connection, it is also necessary to note that, for the first time in the past years, our publishing house accomplished 108 percent of the plan set forth in science publication lists.

As already noted, during the past year the

Academy had met with a certain amount of success in seeing the results of its investigations introduced into practice. It is sufficient to point out that the resulting from /this fact in the case of just four of the institutes (Power Engineering, Electrical Engineering, Machinery, Biology, problems of Forestry and the Chemistry of Wood), for 1959 exceed the sum of 15.6 million rubles.

The personnel of the Academy during the past year rose by 16.5 percent, in other words it was increased by the addition of 269 scientists and science-technicians.

Despite the fact that 28 scientific assistants defended candidate dissertations and 5 assistants defended doctorate dissertations, the scientific qualification of all assistants still is lagging considerably behind the rising needs. Thus, one of the most pressing problems of the coming period is a strengthening of the training of scientific personnel in nuclear physics, electronics, power engineering, automation, the chemistry of polymers and monomers, biophysics, biochemistry and other science branches. Failing to solve this problem, we will not be in a position fully to solve the scientific tasks assigned to us by the Party and the Government either as regards ensuring the completion of the seven-year plan ahead

of schedule, or as regards the attainment of the grandiose long term objectives of the development of the national economy.

Measures taken for the creation of new laboratories and the course adopted for the development of new science branches have been fully justified. The new Department of Chemical and Geological Sciences is becoming an important center from both a scientific and practical viewpoint. It contributes to the development of the chemical industry in the republic.

At the same time, the question of a more definite orientation of the activity of some of our institutes arises, evident. It is quite / for example, that the scientific orientation of the Institute of Physics should be more clearly defined. On the basis of some of its laboratories, as well as those of the Institute of Power <sup>Engineering</sup> and Electronics, a new scientific establishment could be created this year as a large and independent laboratory of electronics and computer engineering. In the future this laboratory could be the basis for the organization of an institute of the same name.

The question should be discussed of the creation in the Academy of multipurpose laboratories, designed to

conduct and complete work on specific large scientific and technical tasks. One such laboratory could be a laboratory for the multipurpose utilization of peat.

We have started the organization of multipurpose laboratories in industrial enterprises. At the REZ plant, for example, we have a laboratory for the development of important parts of electrical engines out of plastics; at the diesel plant there is a laboratory for the development of a series of new type diesel generators; at the glass products factory there is a glass fiber laboratory; at the pharmaceutical plant - a laboratory on medicinal preparations. This new form of organization for carrying on scientific technical work for industry, will be an important factor in the strengthening of the development of technical progress in the republic.

At the same time we would like to touch on another question that follows from the foregoing. We have in mind clearly technologically oriented laboratories. Thus, for example, in accordance with the resolution of the Council of Ministers Latvian SSR, a large experimental base is being organized within the Sevnarkhoz system, for improving the level of welding technique. It would be meaningful to merge the welding laboratory of the

*Institute of Machinery* with that base, creating thereby a new technological scientific research center.

Furthermore, the program of work of the *Institute of Machinery* is being reorganized by the Institute to permit investigations in the field of automation of production processes. It would appear necessary to restudy the organizational structure of this Institute and to have it devote itself entirely to problems of automation and to applied mechanics, that are linked to automation. The machinery Institute, in this connection, should be reorganized during the current year into an Institute of Mechanics and Automation. This would be more in accord with the objectives of its work, the substance of the work and would be in line with the growing needs of industry.

Our biologists, as is known, are occupied with work to improve the fishing industry of the republic, and are working on this jointly with workers in the Institute of Animal Husbandry and Veterinary Medicine. Within the ovnarkhoz system a special institute recently has been organized. It would be desirable to discuss the question of the creation of a single scientific research organization for the fishing industry in the republic.

An analysis of the activities of seminars and

scientific councils of the institutes shows that only some of the scientific establishments during the past year (Inst. of physics, . . . . .) discussed separate problems of methodology in the conduct of scientific investigations. During the current year it is necessary to widen the scope of systematic work of improvement in methodology of investigation work by the wide use of isotopes, new reactors, automatic electronic instruments and other means.

For the year 1960 the Academy has faced up to a series of new tasks in the field of theoretical research and actual practice. But in order to carry out these tasks it will be necessary to concentrate more forcefully all efforts and resources on the basic trends of science, to complete liquidation of ignorance and do away with all shortcomings that impede the further speeding up of the scientific activity of the organizations within the Academy.

The personnel of the Academy undertakes greatly to increase the contribution of science to the further development of technical progress. But in order to carry out this task, it is necessary more fully to utilize our reserve possibilities, and to direct them towards the solution of concrete scientific problems of the current seven-year plan. What will be needed is a painstakingly detailed

daily organizing activity for the training of personnel, raising its qualifications, operational direction of scientific investigations, finding new, more meaningful forms of organizing the work of scientists.

The results that have been attained prove that Academy of Sciences is able to cope with the problems assigned to it under the seven-year plan, and that it will justify the deep trust that it enjoys of the Party and of the Government.

General Meeting of the Academy of Sciences

Latvian SSR - 11 February 1960

By Ya. Magone

The annual general meeting of the academicians and member-correspondents of the AS Latvian SSR took place on 11 February of the current year in the conference hall of the main building of the Academy of Sciences of the republic. Besides the scientists of the Academy, representatives of the party and of soviet directing organizations and enterprises were present, including representatives of the Sovnarkhoz of the Latvian SSR, of the higher educational institutions of the city of Riga, the ministries and departments of the republic - a total of more than 400 persons.

The meeting was called to order by the President of the Council of Ministers Latvian SSR, academician Ya. A. Peyve who gave the floor to academician K.K. Plaude, <sup>review</sup> who, in turn, presented a report entitled "Basic summaries

of the activity of the Academy of sciences Latv. SSR for the year 1959"<sup>1</sup>).

In his considered report, academician K.K. Plaude featured the successes of Soviet science. The three rockets launched into outer space brought worldwide triumphal acclaim to Soviet science. They clearly and effectively demonstrated the excellence of science in the Soviet Union as compared to the rest of the world.

The large and comprehensive activity of the Academy of Sciences Latvian SSR during the past year, proceeded under the aegis of a further strengthening of the ties between science and production. Work of the Academy along the most important scientific lines developed with much success. The reader of the report presented a detailed story of the successes achieved by the exact science Institutes, and pointed out that during the past year the institutes of the Department of social sciences attained a measure of success in their work and produced papers having scientific value for the national economy and culture of the republic.

K.K. Plaude gave emphasis in his report to the most important scientific problems, the solution of which will constitute a task of the Academy in the coming seven-year

<sup>1)</sup> A shortened version of the report is published in this issue

period. He pointed out the importance of injecting new life into the work of all scientific research institutes and of improving coordination of the scientific research activity of all scientific establishments and higher educational institutions of Soviet Latvia. He dealt in detail with the most important problems and subjects that the Academy of Sciences Latvian SSR will be called to deal with during the years immediately ahead.

Academician P.I.Valeskals, in his report "The longterm development of science in the Academy of Sciences Latvian SSR for the years 1960-1975"<sup>2)</sup>, painted a picture of the wide development of the scientific establishments of the Academy, and of scientific research work. They cover all the most important scientific disciplines and put the Academy in the forefront of the leading academies of our powerful Fatherland - the Soviet Union. The reader of the report dealt in detail with the longterm plan of development of a network of scientific enterprises of the Latv. SSR for the years 1960 - 1975.

In the discussions of these reports, the first speaker was the acting director of the Institute of machinery, candidate of technical sciences, S.B.Aynbinder. He pointed

<sup>2)</sup> The report will be published in "News of the AS Latv.SSR" No.4 for 1960

out that in 1956 the personnel of the institute consisted of 25 staff members while at present they number over 100. As a result of the work of the Institute, if the economies resulting from the adoption of its proposals be taken into account, these economies far exceed the annual budget of the Institute.

One of the important problems in the forthcoming work of the Institute is reducing the weight of machinery with a simultaneous increase in its dependability. A solution of this problem depends on the further development of various sections of mechanics and primarily solid state mechanics. The creation of economically justifiable automatic instruments is an important task. For the most effective solution of this and a series of other problems, it is desirable to reorganize the Institute of Machinery Science into the Institute of Mechanics and Automation. There must be a more rapid creation of laboratory problems and the tempo of developing problems of actuality must be speeded up. To plan work for longterm completion is to fall behind.

The director of the Institute of Organic Synthesis, academician S.A.Giller, pointing out the grandiose perspectives for the development of science during the next 15 to 20 years, discussed problems of development of

of the chemical industry of the republic. He noted that the average weight of the gross production of that industry with respect to the overall gross output of the industry of the Latvian SSR is not great. The seven-year plan will see the merging of existing pharmaceutical enterprises into a single chemical-pharmaceutical factory. Thereafter a synthetic vitamin plant will be erected in the republic, followed by a synthetic aromatic materials plant.

For such a new branch of the chemical industry, one that has never before existed in Latvia, the first need is personnel that must be trained for the job. In this regard, it is the opinion of S.A.Giller that a mistake was made: the chemical department that existed in the Latvian State University was transferred to the Riga Polytechnic Institute. There is hardly another university in the union that does not have a chemical department.

Speaking of the work of the Institute of Organic Synthesis in its search for active compounds, S.A.Giller points out that, as a result of diversified activity undertaken jointly with other institutes, about 10 such compounds were discovered, including furazolidone, a compound widely used in animal husbandry in the USSR as well as abroad.

At present the Institute is sorely in need of a corps of laboratory technicians with new modern laboratories. This corps must be made operational in 1960.

Academician A.A. Shmidt in his speech noted that the reports presented at the general meeting somewhat emphasized chemical and physical sciences, while little was said about the necessities of life. He underscored the fact that the development of medical and biological sciences must parallel that of technical sciences. The medical laboratories of the institutes of the AS, for the time being, are comparatively primitive. They do not have modern technical equipment and are poorly staffed with technical personnel. The planning of the construction of an institute of virology and of one on food problems will be a forward step. The science of feeding, in recent years has been most successful, particularly in the case of such serious illnesses as cardio-vascular diseases.

The Institute of Experimental Medicine must actively pursue studies based on the use of radioactive isotopes.

In conclusion, academician A.A. Smidt also declared himself opposed to the discontinuance of the department of theoretical chemistry in the Latvian State University.

Corresponding Member of the AS Latv. SSR Ya.G.

Panovko, speaking of the Chemical Department of the Riga Polytechnic Institute, puts forward his opinion that this department is not at present in a worse position than when it was at the university. The training of new personnel may also be organized at the Riga Polytechnic Institute.

He then requests the Presidium of the AS to help hasten the reorganization of the Institute of Machine Science of Mechanics and Automation. This is necessary if its work is to be brought in closer touch with industry needs.

Mentioning the future prospects of the Institute of Electronics and Computer Mathematics, Ya.G.Panovko points out that life itself indicates the need for the AS Latv. SSR to develop mathematical disciplines in their widest interpretation.

The publishing end of the AS, says Ya. G. Panovko, is doing considerable work, but has only limited polygraphic facilities. As a result, publication of the papers of the Academy's institutes is unforgiveably delayed. The Presidium of the AS must find a radical solution to this problem.

Corresponding Member Ya.G. Panovko notes the "Izvestiya AN Latv.SSR", satisfactory work of the journal (*News of the AS Latv. SSR*),

that is closely linked to the institutes and is of considerable assistance to them in publishing scientific research papers.

The director of the Institute of Language and Literature of the AS, candidate of philological sciences E.P. Svimpul-Sokol, says that the institute has grown both in size and improved quality-wise. It has acquired a certain amount of authority among scientists of other republics.

A link has been established with institutes of the People's Democracies and with distant China. The personnel of the Institute has started work on the publication by the Academy of the works of Ya. Raynis and publication by the Academy of folk songs with a description of dialects. Work the publication of popular dictionary of the Latvian language is in full swing.

Referring to the Publishing house of the Academy, E.P. Svimpul-Sokol agrees with Ya.G. Panovko's opinion and proposes the creation of an independent/polygraphic center to make it possible to publish timely papers that include complicated mathematical formulae, as well as compile dictionaries with all linguistic notations.

The director of the Riga Polytechnic Institute, Corresponding Member of the AS Latv. SSR K.K. Neyland, having

reported some interesting facts regarding training of new specialists in the Polytechnic Institute, notes that the discussions as to the best location for a chemical department, appear to be based on a misunderstanding. This department formed part of the system of the <sup>former Riga</sup> Polytechnical Institute since 1862, and many talented chemists graduated from it. It is only natural that there be created in the Polytechnic Institute for the benefit of future chemists all conditions for fruitful work. This is now being done. A laboratory for handling problems is being created, under the management of academician G.Ya.Vanag; considerable resources have been assigned to equip this laboratory; in the current year capital repairs of the chemical department have been started.

Of active assistance to the Institute are academicians K.K.Plaude and A.I.Kalnin'sh and candidate <sup>of</sup> technical sciences S.B.Aynbinder. Similar assistance is also expected from the other scientists of the AS.

Candidate <sup>of</sup> technical sciences E.A.Yakubaytis reports to the meeting about the work of scientific research institutes that are technically oriented on problems of computer engineering kibernetics and electronic machines. He points out that the first specialized electronic machine

for the Riga railroad station will be prepared in time for the 20th anniversary of Soviet Latvia.

Joint work with the Latvian State University on machine translation from Russian to Latvian is continuing successfully. Important work is being done in computer mathematics, but, despite a series of successes, this work is still inadequate, especially as regards kinetics.

Academician-secretary of the Department of Chemical and Geological sciences, academician A.I.Kalnītš, having noted the achievements of the chemists of the republic as shown by the reports that had been presented, both in scientific work and in the practical application of the results, as well as the enormous possibilities for the development of this science in the next 15 to 20 years, reports that the republic's chemists are in favor of retaining the chemical department at the Polytechnic institute, and that the creation of two chemical departments - one at the Institute and one at the Latv. State Univ. - would merely result in a division of forces. Speaking of new corps of technicians, academician A.I.Kalnītš notes that the building up of the laboratory personnel of the Institute of Chemistry and Wood Technology is proceeding very slowly,

and that construction of a building to house the chemistry Institute has not yet been planned.

One of the deficiencies of some of the institutes of the Academy of sciences is the absence of production centers. Payment for personnel lacking degrees in science remains unfixed, as a result of which fact there is an impermissible turnover of the better qualified workers in this category.

Deputy director of the Institute of History of the AS, candidate of history sciences A.A.Drizulis, in his report emphasized the possibilities of development of the science of history over the next 15 years.

Guided by resolutions of the Central Committee of the party regarding the desirable propaganda posture under present conditions and other decisions of the party, by directives of the managing organs, the personnel of the Institute of History will concentrate its main attention on the study of the following four problems:

1. History of the Latvian SSR.
2. History of the national economy of the Latvian SSR.
3. History of the material culture of the Latvian people.
4. Cultural history of the people of Latvia.

Continuing, A.A.Drizulis explained <sup>the need</sup> to study these

particular scientific problems.

Academician-secretary of the Department of biological sciences A.M.Ozol, proposed approval of the annual report presented by academician K.K.Plaude, and the outlook for a further development of science by the AS Latv. SSR. He expressed disagreement with the opinion expressed by academician A.A.Schmidt to the effect that both the annual report and the outlook do not adequately treat of medical and biological sciences, since the creation and actual building of new institutes of foodstuffs, virology, biochemistry, botanics and others already has passed beyond the planning stage.

As to the development of investigations, ensuring that institutes have modern laboratories and equipment, these are primarily the responsibility of workers in the particular science branch involved. Thus, for example, it is up to the medical personnel to worry about a radio-biological medical laboratory, including both medical students and the scientific collaborators of the Institute of experimental medicine.

Academician A.M.Ozol noted that investigations in the fields of genetics, biophysics and biochemistry are insufficiently developed in the institutes of the Department.

In concluding his remarks, academician A.M.Ozol mentioned household problems - the need to improve the material and technical equipment and of the need to ensure an expeditious transport for the institutes.

Academician G.Ya.Vanag, in his remarks, informed the gathering regarding progress in the training of chemical personnel at the present time, and requested an early decision on the publication of a chemical journal, so badly needed by the chemists of Soviet Latvia.

Academician L.K.Liepin', speaking of the achievements of the Chemical Institute and of other similarly oriented institutes, noted that consultations and assistance are requested of the institutes of the AS Latv. SSR by many institutes of the Union republics, countries of peoples democracy and even capitalistic countries.

The proposed development of multi purpose laboratories and investigation work in areas that are common to different sciences is timely, but this has not yet entered the planning stage. It is necessary that these proposals be included in the 20-year plan when the latter is planned.

With the organization of new enterprises for the chemical industry, serious thought should be given to the rebuilding of existing plants and the transfer of some of

them beyond city limits, since they pollute the air, thereby endangering the health of the population. The commission appointed by the Presidium of the AS regarding the problem of purifying the air of the city of Riga, has assembled material on this problem and will present it to the Presidium for decision.

Academician Ya.V.Peyve noted that, thanks to the thoughtful actions of the Party and the Government, soviet science advances to a new high level every year, both with respect to its theoretical development and as regards the reflection of scientific work in actual practice and the strengthening of the ties between science and production.

We are living in the atomic energy age, in the age of sputniks, when bases are being formed for interplanetary communications. It is precisely the achievements of Soviet science that constitute a solution of such an especially grandiose problem as the launching of an intercontinental or interplanetary rocket to the moon - the rocket that left a Soviet emblem on the moon - as well as photographing the hidden side of the moon and transmitting its image to the earth. All of this bears witness to the fact that the level of science as a whole has undoubtedly risen

sharply throughout the Soviet Union, and . . . in many of its decisive features is well ahead of science in the most highly developed capitalistic countries including the United States.

The resolutions of the 21st *Congress* of the CPSU place before soviet science new grandiose tasks both for the coming seven-year period as well as for the future.

Academician Ya.V.Peyve dealt in detail with concrete problems confronting the Academy of Sciences Latvian SSR in the light of decisions of the 21st *Congress* of the CPSU, the June and December plenaries of the CC CPSU, and stressed the fact that scientific achievements must immediately be reflected in practice, otherwise these achievements are forgotten and the work often does not bring the needed useful results.

In conclusion, academician Ya.V.Peyve expressed assurance that the Academy of Sciences of the republic, backed by proper efforts of every member of its personnel, will find a way to tackle its tasks, under the leadership of the Central Committee of our party, with the object of successfully carrying out the seven-year plan and the further longterm plans for the building of communism in our country.

\* \* \*

Following discussions, the general assembly of academicians and corresponding members of the AS Latv. SSR adopted the broad resolution worked out by a commission under the chairmanship of academician A.K.Malmeyster on the reports that had been presented, and elected the leadership of the Academy of Sciences.

Professor, doctor of technical sciences academician K.K.Plaude, was elected unanimously as President of the Academy of Sciences Latvian SSR. P.I.Valeskals, professor and academician, was elected Vice-President of the AS also unanimously.

At the session of the Presidium of the AS that took place after the meeting, V.P.Samson, corresponding member of the AS Latv. SSR was appointed acting academician-secretary of the AS Latv. SSR.

Resolutions of the General Meeting of the  
Academy of Sciences Latvian SSR

Having heard and discussed reports by academician K.K.Plaude on the results of the scientific activity and the introduction into daily practice of completed scientific studies for the year 1959, and having heard and discussed reports by academician P.I.Valeskaln on the prospects of scientific developments in the Academy of sciences Latvian SSR for the 1960 - 1975 period, the General Meeting of the AS notes that the Academy of Sciences during recent years has conducted considerable work in strengthening its scientific activity and solidifying the ties between science and production as well as the ties bewteen its scientific activity and other scientific establishments of the AS USSR.

The Academy of Sciences has created recently a series of new scientific establishments and has considerably widened the scope of existing establishments. Scientific staffs have increased in numbers. As of 1 January

1960, a total of 1,798 persons worked in the scientific enterprises of the AS. Included in that number were 709 scientific workers and 783 persons in the scientific-technical staff. 21 academicians, 16 corresponding members, 33 doctors and 28 candidates of technical sciences are working in the Academy. During the year under review, 4 doctors and 28 candidates of technical sciences have completed training. Certain science trends have become noticeable in the Academy, trends that are linked to the solution of important theoretical problems, that are of help in the development of the national economy and the culture of the republic. These include work in the field of utilization of radioactive isotopes for peaceful purposes, solid state physics, power engineering, mechanics, automation and mechanization of production processes, the synthesis of complex biologically active materials, the search for new methods of obtaining high polymers and active monomers from vegetable matter, the study of the physiological action of microelements and vitamins, the study and treatment of malignant tumors and work in the field of virology.

Studies in the field of the history of the Latvian SSR and questions concerning the language and literature of the Latvian people have occupied a leading position.

During the year under review the Academy of Sciences has attained important results, of substantial theoretical and practical significance.

IN THE FIELD OF PHYSICAL AND TECHNICAL SCIENCES basic considerations have been developed for the growth of power engineering in the republic. A system of energy distribution has been established for various branches of the national economy of the republic, under conditions of widespread utilization of gas, the use of liquid fuels, full electrification of industry and life and the maximum development of heating. A graduated theory of constructional damping has been developed. A method and means of automation of the technology of concrete have been created. A methodology of studying the character of hardening of cement paste has been developed and tested - an ultrasonic method. The basic physical technical characteristics of structural gas-concrete have been established.

The Institute of Machine Science has completed a cycle of investigations as a result of which the possibility and prospects of the use of plastics in collectors of large electric machines has been established. For the widespread introduction into practice of the results obtained, a project laboratory is being established. The Institute of

Physics, jointly with enterprises, has developed a series of relay-type new/radioactivity instruments for the automation and control of production processes. The new instruments have been passed on to local and Tallin factories for serial production. The Institute of Power and Electrical Engineering has developed diverse measures for the full automation of heat supply for buildings. The Institute of construction and architecture has projected and manufactured a vibrometer.

#### IN THE FIELD OF CHEMICAL AND GEOLOGICAL SCIENCES

a series of new cancer preparations has been synthesized and are being tested under clinical conditions. The experimental production of a previously synthesized cancer preparation - e t o k s e n - is continuing. The technology of production of Tio-TNF and its actual production has been expanded. Investigations have been completed on new methods of synthesis based on indandion. The technology of producing a series of preparations has been transferred to the production stage: furadonine, phenilin, furazolidone, ratindan and others. Work was being completed on certain phases of the practical adaptation of a new method of the vapor-phase oxidation of furfrol

into maleinic anhydride. New analytical reagents have been isolated. A study of the structure of alkali earth metal borates has been completed. Investigations have been conducted on the kinetics of metal oxidation and on the principles of anti-corrosion work. A method of hydrolysis of vegetable materials with a minimum expenditure of sulfuric acid has been completed, and the construction of two experimental production plants has been started. A method of thermal decomposition of cellolignin with an increased output of levoglucosan - a raw material in the production of polymer materials - has been developed. A new method of obtaining plastics, by the substitution of phenol insufficiency with lignin, and a method of obtaining solid wood-fiber tiles has been worked out. Work has been conducted on the isolation of heavy metal accumulations in maritime deposits, and geological maps of the republic have been compiled.

#### IN THE FIELD OF BIOLOGICAL AND MEDICAL SCIENCES

there has been conducted a study of the role of microelements, vitamins and antibiotics in metabolism and in the enriching of the feed ration of animals and fowl. Combined feeds, enriched with these materials, are being very effectively utilized in 200 collective farms of the republic.

Valuable results have been obtained in the investigation and adaptation of microelements in plant culture. Proposals have been developed for the creation of a single fishery center for the republic. In the field of forestry, a high speed method of wood drying is being introduced into practice, together with a method of voluntary-selective felling in the forests of 150 collective farms. In the field of medicine the complete safety and high immunologic effectiveness of a live polio vaccine has been established. The development of a method of feeding during radiation treatment of malignant tumors has been worked out. The value of irreplaceable food factors (aminoacids and vitamins) in the prophylactics and treatment of radiation diseases has been established. Completed is work on the study of air ionization of the Riga seashore on the course of the hypertonic disease. Aerionotherapy is being applied in the sanatoriums on the coastal regions of Riga.

#### IN THE FIELD OF SOCIAL SCIENCES

the institutes of the Department of Social Sciences in 1959 published and prepared for printing a series of serious works: the 3rd volume of the "History of the Latvian SSR", a "Grammar of modern Latvian", separate volumes of the "His-

tory of Latvian literature" and others. During the year under review there has been an improvement in the publishing work of the Academy: the publication of popular science literature attained a total of 1,630 science-publisher's sheets.

Along with achievements, however, there are in the activity of the Academy of Sciences, substantial deficiencies. Almost nothing is done in the Academy in the matter of investigating problems that are on the borders of various sciences (physics - chemistry, physics, chemistry - biology and others). Such very important disciplines as computer technique, computer mathematics and the automation of production, that are of vital importance to the development of the national economy of the republic, are being developed with insufficient intensity and, quite obviously, at tempos that are too slow.

The Academy of Sciences does not give the necessary attention to the training of scientific personnel in new fields of science and technology, such as nuclear physics, computer technique, automation, remote control, biophysics, biochemistry, physiology, cytology, genetics and others. This fact impedes the development of investigations in these important science branches. The preparations of doctors of

science also is deficient. There is inadequate utilization of the fellowship of the AS USSR, as well as the apprenticeship facilities of the AS USSR for the training of personnel.

There were serious inadequacies in the work of individual institutes; the Institute of language and literature is scattering its efforts; the Institute of Experimental Medicine has not sufficiently developed studies of food problems and the use of microelements in medicine. There are important deficiencies and serious mistakes were permitted in the work of the Institute of Economics; the scientific development of subjects . . . in the Institute was conducted out of context of daily practical problems; the leadership of the Institute (former director P.P.Dzerve and deputy director B.A.Trey) were / <sup>found to be</sup> incapable of correctly understanding the tasks with which the Institute was confronted, and to organize the personnel for the active study of economic problems that resulted from the historical resolutions of the 21st Congress of the CPSU; individual tasks of the Institute gave evidence of distortions that had a political character.

The Presidium of the AS and the Department of Social Sciences failed to take timely measures for improving the work of the Institute of Economics.

The development of scientific studies in the Academy of Sciences is retarded due to an inadequate material technical and scientific experimental base. Most of the enterprises of the AS have inadequate working space, and are in locations that are not adapted to scientific investigations. The scientific enterprises of the Academy do not have experimental centers capable of accommodating large installations. The Academy is poorly supplied with modern scientific equipment, that would permit the conduct of investigations on a modern scientific level.

As a result of this situation, studies in the fields of chemistry, geology, biology, medicine and technical sciences are conducted with practically no application of such progressive investigation methods as the use of radioactive isotopes and computer technique. Individual achievements of the Academy's scientists are but slowly incorporated into production. The coordination of scientific research in the development of important problems is poor.

For purposes of the further development of the scientific activity of the Academy, and for the solution of the most important scientific problems confronting scientists, the General Meeting of the Academy of Sciences makes the following resolutions:

1. To approve the practical activity of the Presidium of the Academy of Sciences in developing new directions for scientific-research enterprises and laboratories.
2. Consider necessary the concentration of scientific efforts and material resources of the Academy primarily for the conduct of studies and solution of problems along basic directions and for the most important tasks.
3. Charge the Presidium of the AS with the task of strengthening the scientific councils for the most important problems and speed up their work, with the objective of accomplishing scientific-methodological leadership, coordination of work and information.
4. Demand that the leadership of institutes and the leaders of the most important problems in the Academy, establish close and continuous contact with the scientific : coun- cils for the most important problems and with the institutes of the AS USSR, and to organize discussions of prospective plans of scientific development, jointly with instructors at higher educational institutions and specialists of the national economy and national culture.
5. Approve the longterm plan of development of a network of scientific enterprises of the Academy of Sciences for the years 1960 to 1980.

6. Direct the Presidium of the AS to take decisive steps for the improvement of scientific investigations in the field of computer technique. As of 1 April 1960 ~~to~~ organize an independent electronic and computer technique laboratory, based on the computer center of the Institute of Physics, and on the electronic machinery laboratory of the Institute of Power Engineering and Electrical Engineering, making such laboratory responsible to the Department of Physical and Technical Sciences, and on the basis of this laboratory, to organize in 1961 an Institute of Electronics and Computer Technique.

7. During the first quarter of 1960 reorganize the Institute of Machine Science of Mechanics and Automation.

8. Since under the present tempo of work, completion of the construction of an atomic reactor in Salaspils in the year 1960 cannot be ensured, request the Presidium of the Academy to present a proposal to the government for the speeding up of this construction, and for supplying the Institute of Physics with equipment and instrumentation necessary for the conduct of scientific investigations on the reactor.

9. Recommend to the scientific enterprises of the AS to prepare subject material for scientific investigation

work on the reactor, and strengthen the work of training personnel for that type of work.

10. Demand that the institutes of the AS put more effort into the work of introducing the scientific investigations into the practice of the national economy, paying particular attention to the development of data on the economic effect and the scientific aspect of its proposals.

11. Request the Presidium of the AS and the Department of social sciences to assume daily control over the activity of the Institute of Economics, and to attain as soon as possible a sharp change in the scientific investigation work of the Institute, giving special attention to the question of selection and to the higher qualification of the scientific personnel of that Institute.

12. Request the scientific enterprises of the Academy of Sciences to strengthen the training of scientific personnel, especially in new areas of science and technology.

13. The Presidium of the AS should discuss the question of the longterm planning of training scientific staffs and measures that can be taken to increase the qualifications of scientific workers, paying particular attention to the training of highly qualified staffs - doctors of science.

14. Assure a wider use of the possibilities for training

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14. Assure a wider use of the possibilities for training

of scientific personnel through fellowship in the AS USSR  
and in higher educational institutions as well as for  
apprenticeship of scientific workers in the institutes of  
the AS USSR.

15. Request the Gosplan (State Planning Commission) of  
the republic to establish subject recruitment  
at the Riga polytechnic institute starting in 1960/1961  
for the training of staffs for the Academy of Sciences  
on the basis of individual plans: 25 persons for the Faculty  
Electrical and Power Engineering; 25 persons for  
the Faculty of Mechanics; and for training as physical  
engineer specialists - 25 persons.

16. Request the Academy of Sciences USSR  
systematically to direct important scientists for long  
periods to the Academy of Sciences Latvian SSR, for pur-  
poses of practical assistance, primarily in the specialties  
poorly represented in the Academy of Sciences Latvian SSR,  
specialties that are important for the development of the  
national economy of the republic.

17. Propose to the Presidium of the AS daily to control  
the course of capital construction, not permitting instances  
of non-fulfillment of annual plans.

FOR REASONS OF SPEED AND ECONOMY  
THIS REPORT HAS BEEN REPRODUCED  
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THIS PUBLICATION WAS PREPARED UNDER CONTRACT TO THE  
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